



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,654	04/18/2000	James T Loch III	3525-74	8308

22466 7590 02/26/2004

ASTRA ZENECA PHARMACEUTICALS LP
GLOBAL INTELLECTUAL PROPERTY
1800 CONCORD PIKE
WILMINGTON, DE 19850-5437

EXAMINER

WRIGHT, SONYA N

ART UNIT	PAPER NUMBER
----------	--------------

1626

DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/529,654	Applicant(s) LOCH III ET AL.	
	Examiner Sonya Wright	Art Unit 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 44-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 44-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to Applicant's amendment filed November 21, 2003.

Claims 44-56 are pending in this application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 44-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,110,914, Phillips et al., which is a 371 of WO 9903859 (PCT/SE98/01364). Applicant discloses substituted amines of spirofuropyridines useful in treating disorders involving reduced cholinergic function such as Alzheimer's disease.

Determination of the scope and content of the prior art (MPEP §2141.01)

Phillips et al. disclose spiroazabicyclic heterocyclic compounds which are useful in the treatment of disorders involving reduced cholinergic function such as Alzheimer's disease. Phillips et al. generically disclose the instant compounds in the '914 patent, in column 1, lines 45-67 and column 2, lines 1-27. Phillips et al. teach the method of use and compositions of the instant compounds in column 1, lines 8-13 of the '914 patent. Phillips et al. teach species that are similar to the instant compounds in a CAS ONLINE structure display of WO 9903859. See answer 15, RN 220100-73-2 and answer 27, RN 220100-57-2. RN 220100-73-2 generically teaches the instant claims when, in the instant claims, R is hydrogen and C1-C4 alkyl; and when R1 is $-(CH_2)_nAr$, Ar is phenyl, and n is 0.

Art Unit: 1626

RN 220100-57-2 generically teaches the instant claims when, in the instant claims R is hydrogen, and C1-C4 alkyl; and when R1 is $-(CH_2)_nAr$, Ar is phenyl, and n is 0 to 3.

Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)

RN 220100-73-2 differs from the instant claims because the $-NHPh$ group in RN 220100-73-2 is in the 4 position on the phenyl while the $-NHPh$ group in the instant claims is limited to the 5 or 6 position on the phenyl. Therefore, the instant compounds are positional isomers of RN 220100-73-2.

RN 220100-57-2 differs from the instant compounds because the species 5'-N-benzylaminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine], wherein R is hydrogen, R1 is $(CH_2)_nAr$, n is 1 and Ar is phenyl, has been excluded from the claims. However, the claims disclose that n can be 2, and 3, therefore, the instant compounds are homologs of RN 220100-57-2. Also, in RN 220100-57-2, the $-NH(CH_2)Ph$ group is in the 5-position, while in the instant claims the $-N(CH_2)Ph$ group is in the 5 or the 6 position. RN 220100-57-2 suggests that the $-N(CH_2)Ph$ group can be in the 5 or the 6 position.

Finding of prima facie obviousness---rational and motivation (MPEP §2142-2143)

However, nothing unobvious is seen in substituting the known claimed isomer for the structurally similar isomer, as taught by Phillips et al., since such structurally related compounds suggest one another and would be expected to share common properties absent a showing of unexpected results. In re Norris, 84 USPQ 458 (1950).

To those skilled in chemical art, one homologue is not such an advance over adjacent member of series as requires invention because chemists knowing properties of one member of series would in general know what to expect in adjacent members. In re Henze, 85 USPQ 261 (1950). The instantly claimed compounds would have been obvious because one of ordinary skill in the art would have been motivated to prepare homologues of the compounds taught in the reference in the expectation that compounds which are similar in structure and which vary by the length of an alkyl group would have a similar use. Therefore, the instant claimed compounds would have been suggested to one skilled in the art.

Response to Arguments

Applicant's arguments filed November 21, 2003 have been fully considered but they are not persuasive. "Applicants take the position that the Examiner has not established a prima facie case of obviousness. . . Applicants point out that they have already successfully rebutted the Examiner's assertion that '914 anticipates compounds of the instant application, so '914 cannot, and does not disclose any genus that includes compounds of the instant application or any individual compound of the instant application. . . Applicants concede that RN 220100-57-2 discloses a $\text{-NH(CH}_2\text{)Ph}$ group in the 5-position, but that is all, nothing in RN 220100-57-2 suggests an $\text{-NH(CH}_2\text{)Ph}$ group at a 6 position. Accordingly, Applicants fail to find basis for the Examiner's assertion and request that the Examiner either provide factual basis (MPEP 2142) for the assertion or withdraw the rejection based thereon. . .

Applicants fail to understand why the Examiner believes that one isomer suggests another. While it may be obvious to try another isomer, it may also be obvious to try all sorts of chemical variations. However, [Applicants] respectfully point out that this is not the test for obviousness. Applicants do not have to show unobviousness. Rather, obviousness must be shown by the Examiner". . . "Applicants argue that they can find no suggestion or motivation in '914 to modify the genus or compounds disclosed therein to make the genus or compounds of the instant application; they can find nothing in '914 that would make an experimenter think there was a reasonable expectation of success; and, finally, they can find no teaching or suggestion in '914 of all the claim limitations."

However, even though Applicants have overcome the rejection under 35 U.S.C. 102 (anticipation), the rejection under 35 U.S.C. 103 has been maintained.

RN 220100-73-2 differs from the instant claims because the -NHPh group in RN 220100-73-2 is in the 4 position on the phenyl while the -NHPh group in the instant claims is limited to the 5 or 6 position on the phenyl. Therefore, the instant compounds are positional isomers of RN 220100-73-2.

RN 220100-57-2 differs from the instant compounds because the species 5'-N-benzylaminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine], wherein R is hydrogen, R1 is (CH₂)_nAr, n is 1 and Ar is phenyl, has been excluded from the claims. However, the claims disclose that n can be 2, and 3, therefore, the instant compounds are homologs of RN 220100-57-2. Also, in RN 220100-57-2, the -NH(CH₂)Ph group is in the 5-position, while in the instant claims the -N(CH₂)Ph group is in the 5 or the 6

Art Unit: 1626

position. RN 220100-57-2 suggests that the $-N(CH_2)Ph$ group can be in the 5 or the 6 position. Therefore, the instant compounds are suggested by Phillips et al..

Nothing unobvious is seen in substituting the known claimed isomer for the structurally similar isomer, as taught by Phillips et al., since such structurally related compounds suggest one another and would be expected to share common properties absent a showing of unexpected results. In re Norris, 84 USPQ 458 (1950).

To those skilled in chemical art, one homologue is not such an advance over adjacent member of series as requires invention because chemists knowing properties of one member of series would in general know what to expect in adjacent members. In re Henze, 85 USPQ 261 (1950). The instantly claimed compounds would have been obvious because one of ordinary skill in the art would have been motivated to prepare homologs of the compounds taught in the reference in the expectation that compounds which are similar in structure and which vary by the length of an alkyl group would have a similar use. Therefore, the instant claimed compounds would have been suggested to one skilled in the art.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sonya Wright, whose telephone number is (703) 308-4539. The examiner can normally be reached on Monday-Friday from 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Joseph K. McKane, can be reached at (703) 308-4537. The Unofficial fax phone number for this Group is (703) 308-7922. The Official fax phone numbers for this Group are (703) 308-4556 or 305-3592.

When filing a FAX in Technology Center 1600, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [joseph.mckane@uspto.gov]. All Internet e-mail communications will be made of record in the application file. PTO employees will not communicate with applicant via Internet e-mail where sensitive data will be exchanged or where there exists a possibility that sensitive data could be identified unless there is of record an express waiver of the confidentiality requirements under 35 U.S.C. 122 by the applicant. See the Interim Internet Usage Policy published by the Patent and Trademark Office Official Gazette on February 25, 1997 at 1195 OG 89.

Art Unit: 1626

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-1235.



Joseph K. McKane

Supervisory Patent Examiner

Group 1600

Sonya Wright

February 10, 2004